Fermilab

TM-779
2320.000

ASTUTE 1978 Spring Conference
Austin, Texas
Session 4A - Wednesday, April 5

or

System 2000 and Conferences

Anne N. Burwell
Systems Analyst
Fermilab
P.O. Box 500
Batavia, Ill. 60510
(312) 840-4278

Our non-experimental computing is done on the IBM 370/195 and 360/75 located at Argonne National Laboratory 23 miles away and connected to Fermilab's 360/50 by a microwave link. We use System 2000 in the stand-alone version and, at the time of this conference, were running under Version 2.70; as our production version. We started in April of 1975 with Version 2.45 and currently have the Laboratory Financial Reporting System, the Property Record System, and the Experimental Program under System 2000. Incidentally, both laboratories are in the midst of acquiring new computers so our environment will change completely in the near future.

In January of 1977, I was asked by the Director's Office to computerize the record keeping for the 1977 Particle Accelerator Conference to be held in Chicago that March. On very short notice, I devised a sequential file system, wrote a few simple PL/1 programs, and we were off and running. Although we did manage to keep a grip on the situation, it quickly became apparent that this was not the way to go. We were cursed with carting batch output and updating back and forth 30 miles several times a day, literally twiddling our impatient thumbs while jobs filtered through the queue at high priority and high cost, and having no ability to make special queries to answer unusual questions. Another conference was being planned for October 1977, the 1st International Conference on Parity Nonconservation, Weak Neutral Currents and Gauge Theories, so we decided to devise a system that would overcome all the obvious problems we had encountered during the Particle Accelerator Conference.

For those of you who have never been involved in an international conference, let me set the scene! For many months, letters, telegrams, and phone calls fly back and forth around the world. Participants range from Nobel Prize winners to graduate students. Personalities run a gamut from Prima Donna to Sir Galahad. Special needs vary from wheel chairs or extra-long beds to nothing. Many individuals work long and hard to make sure that there will be no slip-ups, discomfort, or embarrassment. It all comes together in a crashing crescendo, amidst the potted palms, with nervous registrars facing people who are convinced that their pre-registration money has been lost, that nobody has ever heard of them, and that it will take them at least an hour to plough through this unpleasant task before they can get on to the meat of the conference. So let us add System 2000 to the picture, behind the potted palms, to provide aid and comfort.

Given this scenario and locations that may vary from a hotel lobby with little equipment to your own facility where everything is available to you, let us consider what our goals should be in designing a general data base system applicable (with minor modifications) to all conferences.

I. Goals

- Absolute minimum of batch processing
- Ability to have access for data base queries through the nearest telephone modem
- Interactive updating of the data base
- Printing name tags by computer
- Handling mailings of notices, correspondence, and proceedings
- Minimum amount of "unique to conference" programming.

Now, let us discuss, one-by-one, how each of these goals was achieved.

1. Absolute Minimum of Batch Processing

Only the registration sheets were batch processed during the Conference itself. Registration sheets were printed during the night after registration closed and clean ones were ready for the registrars each morning. This conference was held at Fermilab so card decks were used, but if the conference is to be physically dislocated from a card reader and printer, WYLBUR or TSO JCL data sets could be put on-line to be submitted interactively with only the output to be physically transported once a day.

2. Data Base Query Capability

Since we were on-line at all times we were able to make such queries as:

- Who is registered from University of Rochester?
- How many people have registered for lunch?
- How many people from England are here?
- Has Mr. Smith registered?

3. Interactive Updating of the data base

Usually we had 6 registrars marking their registration sheets for updating as participants registered. We would take one registration master sheet, give the registrar a clean sheet, do the updating, and return it in rotation. Each update was checked on the sheet so that it was not repeated. An actual sample of the updating sheets is shown in Appendix A.

4. Printing Name Tags by Computer

Argonne has the graphics software DISSPLA, and another software package developed there called SLIDES, which can do graphics on the FR80. The names and institutions were pulled out of the data base by Report Writer to a sequential file and massaged by a PL/1 program to reformat the names and insert the proper control cards for SLIDES. Then SLIDES AND DISSPLA produced a tape for the FR80 and voila! - microfilm. Slides also drew a box around each name tag so that they could be mass-cut from the prints since it comes in comic strip fashion - 9 tags to a page. Dick Bertrand of ANL was of great help with this part of the project. Anyone who has DISSPLA and want to use SLIDES should contact User Services at Applied Mathematics Department at Argonne National Laboratory. A decision was made to print only the last name, as large as possible. However, I would suggest that the first name and the institution also be included, as experience proved that people eventually wrote it all in to avoid confusion. An example of each type of tags is shown in Appendix B. It would also have kept a man named MO from absent mindedly wandering around with his name tag upside down saying OW! We printed the name tags two days before the conference and therefore had only about 15 last-minute tags to type. This is a much easier way of handling name tags than a nervous typist with 5 or 10 impatient physicists breathing down her neck at registration time.

5. Handle Mailing of notices, correspondence, and proceedings

Of course, not every mailing went to every participant, and we needed a means of recovering address labels for several categories of participants. At Fermilab we use a sequential file system for printing mailing labels. For this conference, we used the 1976 "List of High Energy Physics Institutes" from CERN in Geneva, Switzerland as our basic announcement mailing list. Astro and nuclear physics institutes were added as they were furnished to us. As individuals entered the conference by invitation or pre-registration, their names were also added. Then the sequential file address numbers could be selected by Report Writer for any specific group mailing as needed.

6. Minimum Amount of "Unique-to-Conference" Programming

Daily reports to the Committee were done interactively using the LIST command. We hope that Report Writer will be available interactively at our installation by the time of the next conference. The Information Systems Group, at Fermilab, has been experimenting with Report Writer on TSO but it is not yet operational. If anyone has Report Writer running under TSO, I would certainly appreciate hearing from you. Report Writer would better control spacing and allow more characters per line, plus the unparalleled advantage of TALLY WHERE.

We feel that we met our goals very well, and we are now ready to discuss the design of the data base.

II. Designing the Data Base

In taking an overview of the logistics of the conference, the information readily falls into 11 broad categories.

1. Personal Information
2. Address
3. Registration
4. Travel
5. Housing
6. Money
7. Meals
8. Special Events
9. Fellow Travelers
10. Proceedings
11. Documents

Certainly not all of these categories are absolutely necessary for a particular conference. We attempted to design a data base that would take into account all the possibilities and then, in practical use, to use only those parts which were necessary for control for any particular conference. Bear in mind that the only input to the data base may be from a Silent 700 buried back in a corner behind a potted palm in a hotel lobby and the only output a roll of paper that has a limitation of 72 characters per line.

Now let us discuss the data base design in detail in the context of the logical definition displayed in Appendix C. We feel that the data base should be heavily keyed for easy retrieval and updating. Remember that it is only a temporary data base and is short-lived; the advantages of keyed elements far outweigh the additional file space necessary.

1. Personal Information

```
 1* NUMBER (KEY TEXT X(4)):
 2* INAME (KEY NAME X(20)):
 3* FNAME (NON-KEY TEXT X(16)):
27* ATTENDEE_TYPE (KEY NAME XX):
31* SUBSIST_NEED (KEY NAME X):
32* SUBSIST_AMOUNT (NON-KEY MONEY $9(4).9(2)):
33* REGIS_FEE_TYPE (KEY NAME X(8)):

40* INTEREST (RG):
41* INTEREST_TYPE (KEY NAME X IN 40):
42* INTEREST_NAME (NON-KEY NAME X(12) IN 40):
43* INTEREST_PFLAG (KEY NAME X(1) IN 40):

50* COMMITTEES (RG):
51* COMMITTEE_CODE (KEY INTEGER 9 IN 50):
52* COMMITTEE_NAME (NON-KEY NAME X(12) IN 50):
```

Each participant is assigned a unique number in C1.

The name information is contained in components 2 and 3. In the future we would also add a field for initials to be used on name tags or in daily reports. The type of attendee, PH for physicist, GS for graduate student, etc., was entered in C27. All participants were classified into one of the following categories: Regular, Speaker, Organizing Committee, Chairpersons, Scientific Secretaries, Guests, Observers, Undergraduates, and this information was entered in C33.

Any participant who is to be granted subsistence can be flagged in C31 and the amount of money requested entered in C32.

Since we had several working committees, an RG (C50) was created. Any participant who served had an entry for each committee in this RG. A good use for this RG would be to select addresses for multiple sets of labels for repetitive mailings to a committee.

Since we had four major physics disciplines represented at the conference, RG40 was set up. There was to be one and only one major discipline flagged although minor disciplines were also entered. Thus, the conference participants could be analyzed by discipline.

2. Address

```
 5* GROUP_CODE (KEY INTEGER 9):
 6* GRCUP_NAME (NON-KEY NAME X(9)):
 7* COUNTRY_CODE (KEY INTEGER 99):
 8* COUNTRY_NAME (NON-KEY NAME X(10)):
 9* INSTITUTION_CODE (KEY NAME X(3)):
10* INST_NAME (NON-KEY NAME X(20)):
11* INST_TYPE (KEY NAME X(1)):
20* ADDR_LABL# (KEY TEXT X(4)):
25* TEMP_ADDR (KEY NAME X(1)):
26* ADDR_CHGDAT (NON-KEY DATE):
```

Address information was contained in C20, 25 and 26. Component C20 contained the record number in our separate sequential file address system. Component C25 contained a flag if the address was only temporary and C26 contained the date to change the address. Weekly queries enabled us to keep our sequential label file updated. One of the most impersonal and aggravating things about any computer system from an outsider's viewpoint is informing the company by letter of some change in your file and then having the computer seemingly ignore the whole thing.

All conference participants were divided into 4 geographical groups in C5.

1 - United States
2 - Eastern European
3 - Western European
4 - Other

and the names were assigned in C6.

Then groups 2, 3, and 4 were further sub-divided into countries. Group 1 was divided by states and territories; and assigned numbers and names in components 7 and 8. The group, country and state codes are listed in Appendices E and F.

Then each unique institution was assigned a 3-character organization code and name in C9 and 10, and a partial list of these is presented in Appendix G. Also, types of institution - such as particle, nuclear, astro, and atomic physics - were coded in C11.

Components C5 through C11 were invaluable in doing statistical analysis of geographical or organizational make-up of the participants.

3. Registration Information

```
 4* ATTEND_STATUS (KEY TEXT X):
12* ATTENDED_CONF (KEY NAME X):
13* CONF_VERIFY_SENT (KEY DATE):
21* REGIS_FEE_CHG (NON-KEY MONEY $9(2).9(2)):
22* REGIS_FEE_PAID (KEY DATE):
23* INVITOR_CODE (KEY NAME X(1)):
24* INVITED_DATE (KEY DATE):
28* APPLY_DATE (KEY DATE):
```

This conference started out to be for 300 physicists. Invitations were sent by the organizing committee and, naturally, we soon began to receive responses. The current status of attendance was coded in C4 as shown below:

N - Invited but no response.
R - Acknowledged, but sent regrets.
K - Acknowledged, not certain of attendance.
A - Accepted invitation.
V - Accepted and a verification returned by the committee. The date the verification was sent was entered in C13.
Q - Not invited but requesting to attend. The date of application was inserted in C28.

A code for the member of the Organizing Committee who sent the invitation was entered in C23 and the date of the invitation was entered in C24. Although the Organizing Committee ranged from the State of Washington to the State of New York, we were able to report to each member each week by mail on the status of his/her invited participants.

When a participant actually registered at the conference, a flag was entered in C12.

We had registration charges varying from $50.00 to zero and the fee to be charged was entered in C21. When the registration fee was paid, either by pre-registration or at the time of the conference, the date was entered in C22.

4. Travel

```
 14* ARRIVAL_MODE (KEY NAME X(1)):
 15* MODE_COMPANY (KEY NAME X(3)):
 16* ARRIVAL_TIME (KEY NAME X(4)):
 17* FLIGHT# (KEY INTEGER 9999):
 18* ARRIVAL_DATE (KEY DATE):
 19* ARRIVAL_BODIES (NON-KEY INTEGER 99):


300* TRAVEL_RES (RG):
301* TRAVEL_MODE (KEY NAME X(4) IN 300):
302* COMPANY (KEY NAME X(3) IN 300):
303* COMPANY_NO (KEY INTEGER 9999 IN 300):
304* TRAVEL_DATE (KEY DATE IN 300):
305* TRAVEL_TIME (KEY NAME X(4) IN 300):
306* DATE_MADE (KEY DATE IN 300):
307* BY_WHOM (KEY NAME X(3) IN 300):
308* TOUR_CODE (KEY NAME X(1) IN 300):
309* TOUR_NAME (NON-KEY NAME X(12) IN 300):
```

Inbound travel information was inserted in Level 0. Mode of travel, arrival time and date, airline, flight number, and number of people in the party were entered in components C14, 16, 18, 15, 17, 18, and 19 respectively. If a conference is to handle inbound travel reservations we would recommend putting this information in an RG at level 1 in order to handle connecting flights and to pattern the new RG definition after RG 300; adding the number of people in the party (which incidentally should be added to RG 300). RG 300, at level 1, is set up to handle outbound travel. Most conferences have a travel desk to assist participants in making return reservations which may include tours. Through flights may not be possible, so that connections or layovers are necessary. Components C301, 302, 303, 304, and 305 handle the actual reservations. C308 and 309 provide tour information and C306 and 307 provide an audit trail for control.

5. Housing

```
 29* ROOM_DEPOSIT (NON-KEY MONEY $9(2).9(2)):
 30* ROOM_DEPOSIT_PAID (KEY DATE):


100* HOTEL (RG):
101* HOTEL_CODE (KEY NAME X(3) IN 100):
102* HOTEL_NAME (NON-KEY NAME X(15) IN 100):
103* HOTEL_RENT (NON-KEY MONEY $9(2).9(2) IN 100):
104* HOTEL_DATE (KEY DATE IN 100):
```

Most people made their own housing arrangements for our conference. However, this is not always the case and the data base is designed to handle other contingencies.

If the conference committee simply makes sure that adequate housing is available, the participant is asked where he is staying when he registers and the information is entered. A simple list can be spilled out to hang on display boards. In conjunction with these simple lists, a permanent typed list of motels, their addresses, and telephone numbers will give the participant all the information needed to track down another individual.

If, however, the conference is arranging all housing, then the matter may become extremely complex. RG 100 was designed to handle the housing. It has some shortcomings in its present form. It has no provision for the type of room requested, such as a double or single; no provision for a request to share a room with another individual; no provision to indicate whether this is a request or an actual reservation; and no audit trail. No provision is made for a room number. However, if the conference committee is given a block of hotel rooms to assign as they please, then the room number could become very necessary. Incidentally, no attempt was made to keep track of the actual location of people who were staying in private residences and this apparently created no problems. If room deposits are required, then C29 and 30 at level 0 provide a mechanism to record the deposit and the date paid.

6. Money

Money is the life-blood of any conference (behind the scenes!) It is very important that accurate records be kept, and that the books are balanced every day. Nothing is more aggravating to a participant than to pre-register and pay fees weeks in advance - only to arrive and find that there is no record of the transaction; or worse yet -- to face the treasurer daily without supporting documentation. Most conferences allow some form of pre-registration and payment of fees, as we did. The standard fee was $50 broken down as follows:

$20	Registration Fee
$20	Purchase of Proceedings Volume
$10	Banquet Fee

The participants in the "regular" classification were charged this fee. Another group of participants, most of them graduate students, were classified as observers, and

could order Proceedings at $20 and attend the banquet (space available). In the future we shall do some redesigning. The fee to be charged, set by the Organizing Committee, will be one component. Total fees paid will be another, together with the last date paid. A separate field for only the registration fee and date paid will be also created. Then, as at present, all monies are found in the appropriate RG.

7. Meals

```
150* MEALS (RG):
151* MEAL# (KEY NAME X(3) IN 150):
152* MEAL_NAME (NON-KEY NAME X(12) IN 150):
153* MEAL_WANTS (KEY NAME X IN 150):
154* MEAL_PAID (KEY DATE IN 150):
155* MEAL_FEE (NON-KEY MONEY $9(2).9(2) IN 150):
```

In addition to the aforementioned banquet, four other meals were provided at the Fermilab conference. Since we planned to collect the money we had to maintain a proper head count and the amount of money collected. At many conferences, the host hotels provide services and collect money and your worries are over. But if the conference is to provide the services, RG150 will provide the necessary information.

8. Scheduled Special Events

```
200* EVENTS (RG):
201* EVENT# (KEY TEXT X(3) IN 200):
202* EVENT_NAME (NON-KEY NAME X(12) IN 200):
203* EVENT_WANTS (KEY NAME X IN 200):
204* EVENT_PAID (KEY DATE IN 200):
205* EVENT_FEE(NON-KEY MONEY $9(2).9(2) IN 200):
```

Many conferences schedule special events. These events might range all the way from a small walking tour of local facilities, to a "ride to a small Texas town, Coupeland, on a rickety old bus" for a famous Texas barbecue. A charge may or may not be involved. RG200 will serve to contain this information. At our conference, the events scheduled were of such a small magnitude that we did it with sign-up sheets.

9. Fellow Travelers

```
250* DEPENDENTS (RG):
251* DEPENDENT_TYPE (KEY INTEGER 9 IN 250):
252* SEX (KEY NAME X IN 250):
253* AGE (KEY INTEGER 99 IN 250):
254* NAME (NON-KEY NAME X(26) IN 250):
255* DNC (KEY INTEGER 9 IN 250):

275* ACTIVITY (RG IN 250):
276* ACTIVITY# (KEY NAME X(3) IN 275):
277* ACTIVITY_NAME (NON-KEY NAME X(12) IN 275):
278* ACTIVITY_WANTS (KEY NAME X(1) IN 275):
279* ACTIVITY_PAID_DATE (KEY DATE IN 275):
280* ACTIVITY_FEE (NON-KEY MONEY $9(2).9(2) IN 275):
```

RG 250 is provided to contain information about spouses and children who accompany participants. Component 251 is a code for wife, husband, child, or whomsoever. C252 gives the sex, 253 the age, and 254 the name. Certainly the age of wives, husbands and whomsoevers is not germaine; but in the case of large numbers of children, special events might be planned according to age level.

RG 275, at level 2, provides a place to capture the information for any special event in which the fellow traveler will participate, including meals. We had no other special activities scheduled.

10. Proceedings

```
34* WANTS_PROC (KEY NAME X):
35* PROC_DT_PAID (KEY DATE):
36* NO_PROC_COPIES (NON-KEY INTEGER 99):
37* PROC_PAID (NON-KEY MONEY $9(2).9(2)):
```

Components C34, 35, 36, 37 will provide a place to capture orders for Proceedings. These orders are either as part of the fee or outside the conference. Be sure that a mailing address record number is included at level 0 as well as the name.

11. Documents

```
400* DOCUMENTS (RG):
401* SESSION_NO (KEY TEXT X(2) IN 400):
402* DOC_NO (KEY TEXT X(2) IN 400):
403* TITLE (NON-KEY NAME X(35) IN 400):
404* PRIN_AUTHOR (KEY NAME X(20) IN 400):
405* ET_AL (NON-KEY NAME X(1) IN 400):
406* SUBMIT_DATE (KEY DATE IN 400):
```

RG 400 will give you a place to hold all the information about the papers you will receive to be included in the proceedings.

In closing this phase of the discussion we would like to mention also that RG 70, a record update auditing trail, was provided for, but not used.

III. Strings

Updating, LIST, and TALLY WHERE strings were defined and stored. The data base definition does not have strings for all updating for reasons that will be explained in the Logistics Section. Certainly a careful evaluation of the particular conference is necessary to determine exactly which strings are needed. Components 800 and up in the data base definition (See Appendix D) are the strings we considered necessary.

IV. Logistics

1. Required File Allocations

When the original files were allocated, we had anticipated 300 participants. There were seven redefinitions of the data base during its evolution and this factor, plus the fact that we actually had 660 participants, caused the file allocation to increase dramatically. Then, just before the conference opened, the data base was unloaded, file allocations were increased abundantly to the sizes shown in Appendix H to avoid a possible shortage of file space during the conference, and the data base was reloaded to insure maximum performance.

2. Updating

All correspondence for each participant was grouped together and filed alphabetically in folders after they passed through the data base updating phase. We originally planned to have the conference staff do the updating. Some strings were developed and a training session was held. The concept was quickly grasped, but it soon became apparent that the staff was too involved in the actual daily work of the conference to do the updating. Our system quickly developed into a well-defined routine.

1. All documents were screened by the conference staff. Pertinent notes and comments were added and initialed.

2. We received the documents and did the data base updating interactively. Documents were not accepted without the conference staff initials on them.

3. We initialed and dated the document after updating returned it for filing, which could not be accepted by the staff without our initials.

We believe that our updating system was 99 and 44/100% accurate.

3. Reporting

A treasurer's report was done interactively daily for the daily receipts and the total receipts were balanced against the cash on hand.

Weekly, the Organizing Committee was mailed a status report on the acceptance status of all participants, as well as a report on the people they had specifically invited.

Other reports were produced, on demand by the staff. These reports were always in Natural Language using TALLY, TALLY WHERE, or LIST, thus making the reporting system machine independent.

4. Cost

The total cost of computing for development and actual operation was $1,600. This cost could be very misleading since it is based on our particular cost structure. Most of the pre-conference updating was done in non-prime time. Therefore, your judgment will have to be exercised in deciding whether this system is economically feasible for you. The conference staff estimates that at least two man-months of

clerical help were saved, plus the bonus that control of the registration would have been lost in the last-minute crush without System 2000. One temporary person was hired for two weeks to type the receipts and organize the packet of information for each participant.

5. Mailing Address

A list of addresses of the participants in our sequential file was available in the registration area for participants to check their address and make any necessary corrections.

V. Pitfalls and Disasters

1. The most horrendous disaster, as you can imagine, would be to crash or damage the data base during the conference! And you are right, we did! Completely wiped it right out of existence! We cannot stress too much that this system should not be a one-man job. We believe the crash occurred because of poor judgment brought on by stress. There should always be at least two knowledgeable people available to work the updating and do the housekeeping. During the conference, they should spell each other to reduce fatigue, or to consult and, at least, be available in case of one of them falls off a bus and gets a concussion! Two heads are usually better than one! Fortunately we had a good back-up tape.

2. Updating should be stopped periodically, at natural breaks in the rhythm of the conference, to KEEP and SAVE. This presumes you are running Stand-Alone, in INDIRECT mode with CLEAR AUTOMATICALLY.

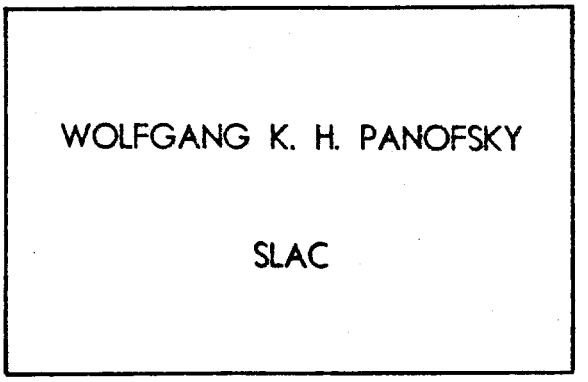
3. LIMIT 0,1/TRUNCATE should be turned on during the conference updating.

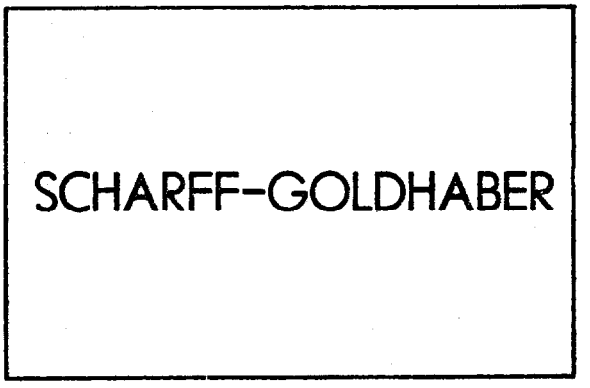
In conclusion, we hope that this presentation will prove useful to you in your next conference. If we can be of any help, please do not hesitate to call.

NO.	NAME	INSTITUTION	TYPE	CHK IN	REG FEE	REG FEE PD	LUNCH OCT 20	LUNCH 21	PAID	B N Q	PAID	BILLETED
69	FREEDMAN, DANIEL Z.	NY, ST U OF,ST BROOK	REGULAR		50.00	/ /			/ /		/ /	
70	FREEDMAN, STUART J.	STANFORD U.	REGULAR		50.00	10/14/77			/ /		X	10/14/77
420	FREEMAN, BELVIN S.	PURDUE U.	OBSERVER		0.00	N/A			/ /		N/A	
607	FREEMAN, JAMES E.	WISCONSIN, U. OF	OBSERVER		0.00	N/A			/ /		N/A	
589	FRISCH, HENRY J.	ENRICO FERMI INST	REGULAR		50.00	/ /			/ /		/ /	
459	FRY, EDWARD S.	TEXAS A&M U.	REGULAR		50.00	09/28/77			/ /		X	09/28/77 HOLIDAY INN
71	FRY, WILLIAM F.	WISCONSIN, U. OF	REGULAR		50.00	/ /			/ /		/ /	
72	FUBINI, SERGIO	CERN	REGULAR		50.00	/ /			/ /		/ /	
699	FUESS, STUART	ILLINOIS, U. OF	OBSERVER		0.00	N/A			/ /		N/A	
574	GAGLIARDI, CARL A.	ARGONNE NATIONAL LAB	REGULAR		50.00	09/20/77			/ /		X	09/20/77 PRIVATE RES
73	GAILLARD, J.	CERN	REGULAR		50.00	/ /			/ /		/ /	
740	GALIK, RICHARD	PENNSYLVANIA, U. OF	REGULAR	X	50.00	10/19/77	3.00	3.00	10/19/77		/ /	
349	GALL, PAUL-DIETER	HAMBURG U., IFEP	REGULAR		50.00	/ /			/ /		/ /	
670	GALLATIN, GREGG M.	PENN STATE U.	OBSERVER		0.00	N/A			/ /		N/A	
700	GALLET, JACQUELINE	ROCHESTER, U. OF	OBSERVER		0.00	N/A			/ /		N/A	
75	GARI, MANFRED	RURH-UNIV BOCHUM	REGULAR	X	50.00	10/19/77	3.00	3.00	10/19/77		/ /	RAMADA INN
795	GARREN, LYNN	ILLINOIS, U. OF	OBSERVER		0.00	N/A			/ /		N/A	
309	GARVEY, GERALD T.	ARGONNE NATIONAL LAB	REGULAR		50.00	09/28/77			/ /		X	09/28/77 PRIVATE RES
76	GASIOROWICZ, STEPHEN G.	MINNESOTA, U. OF	REGULAR		50.00	09/06/77			/ /		X	09/06/77 HOLIDAY INN
78	GELL-MANN, MURRAY	CALTECH	REGULAR		50.00	/ /			/ /		/ /	
586	GEORGE, JACOB	CATH U OF AMERICA	REGULAR		50.00	09/30/77			/ /		X	09/30/77
331	GIBSON, BENJAMIN F.	LOS ALAMOS SCI. LAB	REGULAR		50.00	/ /			/ /		/ /	
79	GILMAN, FRED	SLAC	REGULAR		50.00	/ /			/ /		/ /	
588	GIOKARIS, NIKOS	CHICAGO, U. OF	OBSERVER		0.00	N/A			/ /		N/A	
80	GLASHOW, SHELDON L.	HARVARD U.	SPEAKER		0.00	N/A	0.00	0.00	N/A		X	N/A HOLIDAY INN
81	GOLD, THOMAS	CORNELL U.	REGULAR		50.00	/ /			/ /		/ /	
538	GOLDBERGER, MARVIN L.	PRINCETON U.	REGULAR		50.00	09/22/77			/ /		X	09/22/77 RAMADA INN
83	GOLDHABER, ALFRED S.	NY, ST U OF,ST BROOK	REGULAR		50.00	10/10/77			/ /		X	10/10/77 HOLIDAY INN
84	GOLDHABER, GERSON	CA, U. OF, BERKELEY	REGULAR		50.00	/ /			/ /		/ /	
85	GOLDHABER, MAURICE	BROOKHAVEN NATL LAB	SPEAKER		0.00	N/A	0.00	0.00	N/A		X	N/A HOLIDAY INN
315	GOLDWASSER, EDWIN L.	FERMILAB	GUEST		0.00	N/A	0.00	0.00	N/A		X	N/A PRIVATE RES
499	GOLLIN, GEORGE G.	PRINCETON U.	REGULAR		0.00				/ /		/ /	
473	GOLLON, PETER J.	FERMILAB	REGULAR		50.00	10/19/77			/ /		X	10/19/77 PRIVATE RES
86	GOOD, MYRON L.	NY, ST U OF,ST BROOK	REGULAR		50.00	/ /			/ /		/ /	
770	GOODMAN, MAURY C.	ILLINOIS, U. OF	OBSERVER		0.00	N/A			/ /		N/A	
87	GORENSTEIN, PAUL	HARVARD U.	REGULAR		50.00	/ /			/ /		/ /	
760	GOSSETT, CINDY	WISCONSIN, U. OF	OBSERVER		0.00	N/A			/ /		N/A	
390	GOTTSCHALK, T.D.	WISCONSIN, U. OF	REGULAR		50.00	/ /			/ /		/ /	
53	GOULARD, BERNARD	MONTREAL, U. DE	REGULAR		50.00	/ /			/ /		/ /	
758	GRABELSKI, DAVID	WISCONSIN, U. OF	UNDER GRAD		0.00	N/A			/ /		N/A	
531	GRAMMER, GARLAND	ILLINOIS, U. OF	REGULAR		50.00	/ /			/ /		/ /	
796	GREEN, JAMES M.	CHICAGO, U. OF	OBSERVER		0.00	N/A			/ /		N/A	
89	GREGORY, B. P.	DGRST, PARIS	REGULAR		50.00	/ /			/ /		/ /	
685	GROBEL, RONALD	WISCONSIN, U. OF	OBSERVER		0.00	N/A			/ /		N/A	
90	GRUENWALD, J. THOMAS	PORTLAND, U. OF	REGULAR		50.00	08/29/77			/ /		X	08/29/77 HOLIDAY INN
92	GUNN, JAMES E.	CALTECH	REGULAR		50.00	/ /			/ /		/ /	
91	GURSEY, FEZA	YALE U.	REGULAR		50.00	/ /			/ /		/ /	
630	GURYN, WLODZIMIERZ	NORTHWESTERN U.	OBSERVER		0.00	N/A			/ /		N/A	
598	HABER, HOWARD E.	MICHIGAN, U. OF	OBSERVER		0.00	N/A			/ /		N/A	

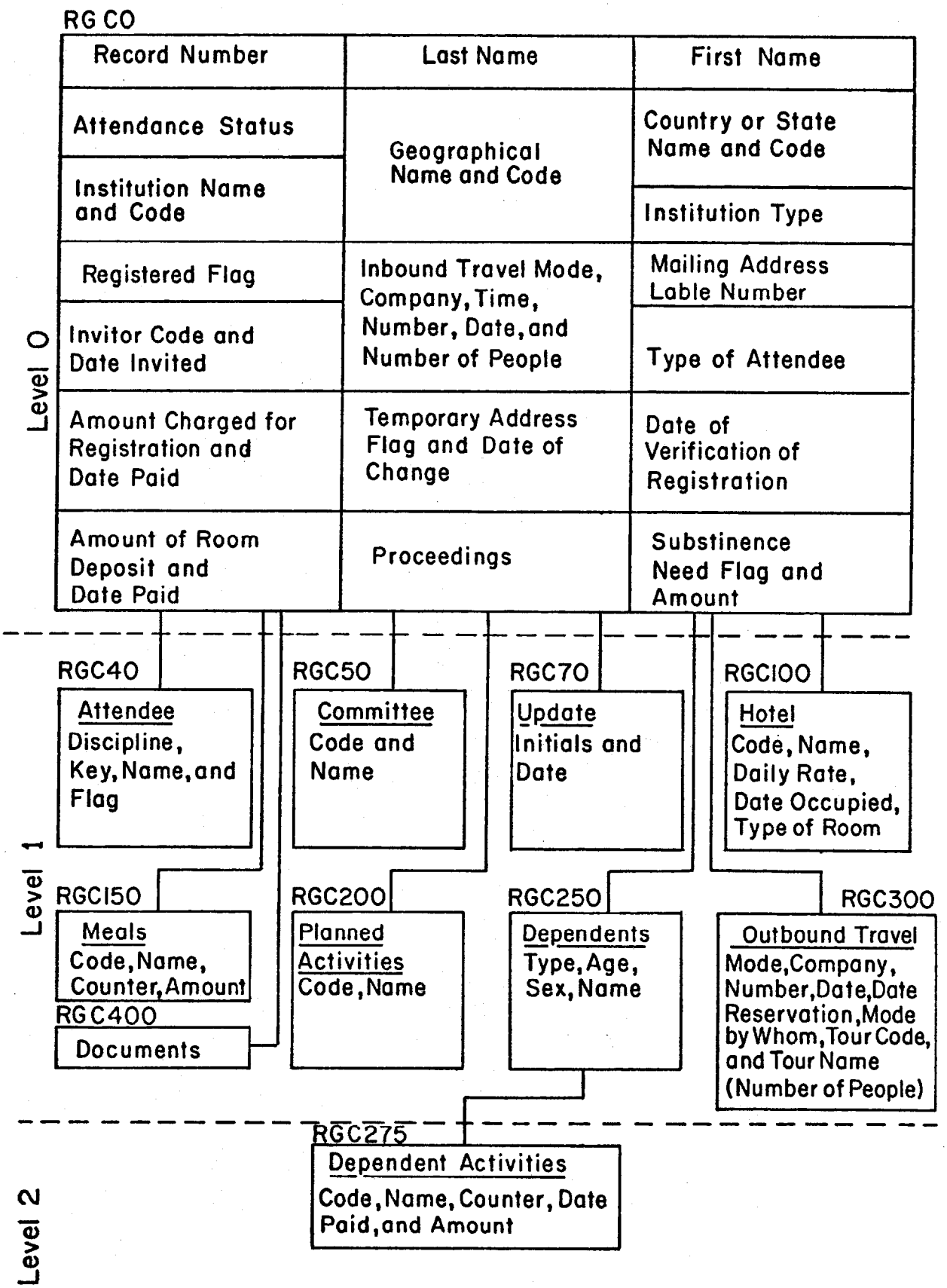
Appendix B

Name Tag Samples





Appendix C


RG CO
Record Number
Last Name
First Name
Attendance Status
Geographical Name and Code
Country or State Name and Code
Institution Name and Code
Institution Type
Registered Flag
Inbound Travel Mode, Company, Time, Number, Date, and Number of People
Mailing Address Lable Number
Invitor Code and Date Invited
Type of Attendee
Amount Charged for Registration and Date Paid
Temporary Address Flag and Date of Change
Date of Verification of Registration
Amount of Room Deposit and Date Paid
Proceedings
Substinence Need Flag and Amount
Level 0
RGC40
Attendee
Discipline, Key, Name, and Flag
RGC50
Committee
Code and Name
RGC70
Update
Initials and Date
RGC100
Hotel
Code, Name, Daily Rate, Date Occupied, Type of Room
Level 1
RGC150
Meals
Code, Name, Counter, Amount
RGC200
Planned Activities
Code, Name
RGC250
Dependents
Type, Age, Sex, Name
RGC300
Outbound Travel
Mode, Company, Number, Date, Date Reservation, Mode by Whom, Tour Code, and Tour Name (Number of People)
RGC400
Documents
RGC275
Dependent Activities
Code, Name, Counter, Date Paid, and Amount
Level 2

Appendix D

Data Base Definition

```
NEW DATA BASE IS CONF:
DEFINE:
  1* NUMBER (KEY TEXT X(4)):
  2* LNAME (KEY NAME X(20)):
  3* FNAME (NON-KEY TEXT X(16)):
  4* ATTEND_STATUS (KEY TEXT X):
  5* GROUP_CODE (KEY INTEGER 9):
  6* GROUP_NAME (NON-KEY NAME X(9)):
  7* CCUNTRY_CODE (KEY INTEGER 99):
  8* COUNTRY_NAME (NON-KEY NAME X(10)):
  9* INSTITUTION_CODE (KEY NAME X(3)):
 10* INST_NAME (NON-KEY NAME X(20)):
 11* INST_TYPE (KEY NAME X(1)):
 12* ATTENDED_CONF (KEY NAME X):
 13* CONF_VERIFY_SENT (KEY DATE):
 14* ARRIVAL_MODE (KEY NAME X(1)):
 15* MODE_COMPANY (KEY NAME X(3)):
 16* ARRIVAL_TIME (KEY NAME X(4)):
 17* FLIGHT# (KEY INTEGER 9999):
 18* ARRIVAL_DATE (KEY DATE):
 19* ARRIVAL_BODIES (NON-KEY INTEGER 99):
 20* ADDR_LABL# (KEY TEXT X(4)):
 21* REGIS_FEE_CHG (NON-KEY MONEY $9(2).9(2)):
 22* REGIS_FEE_PAID (KEY DATE):
 23* INVITOR_CODE (KEY NAME X(1)):
 24* INVITED_DATE (KEY DATE):
 25* TEMP_ADDR (KEY NAME X(1)):
 26* ADDR_CHGDAT (NON-KEY DATE):
 27* ATTENDEE_TYPE (KEY NAME XX):
 28* APPLY_DATE (KEY DATE):
 29* ROOM_DEPOSIT (NON-KEY MONEY $9(2).9(2)):
 30* ROOM_DEPOSIT_PAID (KEY DATE):
 31* SUBSIST_NEED (KEY NAME X):
 32* SUBSIST_AMOUNT (NON-KEY MONEY $9(4).9(2)):
 33* REGIS_FEE_TYPE (KEY NAME X(8)):
 34* WANTS_PROC (KEY NAME X):
 35* PROC_DT_PAID (KEY DATE):
 36* NO_PROC_COPIES (NON-KEY INTEGER 99):
 37* PROC_PAID (NON-KEY MONEY $9(2).9(2)):
 40* INTEREST (RG):
 41* INTEREST_TYPE (KEY NAME X IN 40):
 42* INTEREST_NAME (NON-KEY NAME X(12) IN 40):
 43* INTEREST_PFLAG (KEY NAME X(1) IN 40):
 50* COMMITTEES (RG):
 51* COMMITTEE_CODE (KEY INTEGER 9 IN 50):
 52* COMMITTEE_NAME (NON-KEY NAME X(12) IN 50):
 70* UPDTNG (RG):
 71* UPDATE_INIT (KEY NAME X(3) IN 70):
 72* UPDATE_DATE (KEY DATE IN 70):
100* HOTEL (RG):
101* HOTEL_CODE (KEY NAME X(3) IN 100):
 102* HOTEL_NAME (NON-KEY NAME X(15) IN 100):
103* HOTEL_RENT (NON-KEY MONEY $9(2).9(2) IN 100):
 104* HOTEL_DATE (KEY DATE IN 100):
150* MEALS (RG):
151* MEAL# (KEY NAME X(3) IN 150):
152* MEAL_NAME (NON-KEY NAME X(12) IN 150):
 153* MEAL_WANTS (KEY NAME X IN 150):
 154* MEAL_PAID (KEY DATE IN 150):
 155* MEAL_FEE (NON-KEY MONEY $9(2).9(2) IN 150):
```

Appendix D

```
200* EVENTS (RG):
201* EVENT# (KEY TEXT X(3) IN 200):
202* EVENT_NAME (NON-KEY NAME X(12) IN 200):
203* EVENT_WANTS (KEY NAME X IN 200):
204* EVENT_PAID (KEY DATE IN 200):
205* EVENT_FEE(NON-KEY MONEY $9(2).9(2) IN 200):
250* DEPENDENTS (RG):
251* DEPENDENT_TYPE (KEY INTEGER 9 IN 250):
252* SEX (KEY NAME X IN 250):
253* AGE (KEY INTEGER 99 IN 250):
254* NAME (NON-KEY NAME X(26) IN 250):
255* DNO (KEY INTEGER 9 IN 250):
275* ACTIVITY (RG IN 250):
276* ACTIVITY# (KEY NAME X(3) IN 275):
 277* ACTIVITY_NAME (NON-KEY NAME X(12) IN 275):
278* ACTIVITY_WANTS (KEY NAME X(1) IN 275):
 279* ACTIVITY_PAID_DATE (KEY DATE IN 275):
280* ACTIVITY_FEE (NON-KEY MONEY $9(2).9(2' ™ 275):
300* TRAVEL_RES (RG):
301* TRAVEL_MODE (KEY NAME X(4) IN 300):
302* COMPANY (KEY NAME X(3) IN 300):
303* COMPANY_NO (KEY INTEGER 9999 IN 300):
304* TRAVEL_DATE (KEY DATE IN 300):
305* TRAVEL_TIME (KEY NAME X(4) IN 300):
306* DATE_MADE (KEY DATE IN 300):
307* BY_WHOM (KEY NAME X(3) IN 300):
308* TOUR_CODE (KEY NAME X(1) IN 300):
309* TOUR_NAME (NON-KEY NAME X(12) IN 300):
400* DOCUMENTS (RG):
401* SESSION_NO (KEY TEXT X(2) IN 400):
402* DOC_NO (KEY TEXT X(2) IN 400):
403* TITLE (NON-KEY NAME X(35) IN 400):
404* PRIN_AUTHOR (KEY NAME X(20) IN 400):
405* ET_AL (NON-KEY NAME X(1) IN 400):
406* SUBMIT_DATE (KEY DATE IN 400):
800*TALLY(STRING?*C801**C802**C803**C804*  ?):
801*TALWH1(STRING?COMPOSE: FOR REPORT TALWH: PHYSICAL PAGE IS 72 BY 0:
DE INT VAL = (1): DE INT UNIQ = RCNT OF VAL: DE INT OCCR = RCNT OF VAL:
DE INT TAL = RCNT OF VAL: OB *1*: PRINT (1)$**********************$:?):
802*TALWH2(STRING?PRINT (2)$     TALLY WHERE$: PRINT (1)$**********************
$: PRINT (1)$FREQUENCY   VALUES$: PRINT (1)$----------------------$: AT END,
PRINT (1)$----------------------$: PRINT R(1,ZZZZZZZ9)UNIQ,(11)$UNIQUE VALUES$:
?):
803*TALWH3(STRING?PRINT (1)$----------------------$: PRINT R(1,ZZZZZZZ9)OCCR,
(11)$CCCURENCES$: PRINT (1)$----------------------$: FOR *1*, AT END,
IF *1* EXISTS THEN PRINT R(1,ZZZZZZZ9BBB)TAL,*1* ELSE PRINT R(1,ZZZZZZZ9BBB)TAL,
 (15)$-NULL-$:?):
804*TALWH4(STRING?COMPUTE UNIQ: FOR RECORD, COMPUTE TAL,OCCR: END REPORT:
GENERATE TAIWH  ?):
900* ADDQ (STRING ?INSERT TREE C0*0 EQ 1**1** 2**2** 3**3** 4*Q* 5**4** 7**5** 9
**6** 11**7** 20**8** END*: ?):
901* ADDN (STRING ?INSERT TREE C0*0 EQ 1**1** 2**2** 3**3** 4*N* 5**4** 7**5** 9
**6** 11**7** 20**8** 23**9** 24**10** END*: ?):
902* ADDA (STRING ?INSERT TREE C0*0 EQ 1**1** 2**2** 3**3** 4*A* 5**4** 7**5** 9
**6** 11**7** 20**8** END*: ?):
903* ADDR (STRING ?INSERT TREE C0*0 EQ 1**1** 2**2** 3**3** 4*R* 5**4** 7**5** 9
**6** 11**7** 20**8** 23**9** 24**10** END*: ?):
904* ADDCOM(STRING ?INSERT TREE C50*0 EQ 51**2** 52**3** END* WH C1 EQ*1*: ?):
905* FINDUSR(STRING ?PR C1 WH C2 EQ*1*: ?):
906* PRFNAME(STRING ?PR C3 WH C1 EQ*1*: ?):
```

Appendix D

```
907* LISTALL(STRING ?LIST/TITLE D(5)ALL PARTICIPANTS,L(20)LAST NAME,L(16)FIRST N
AME,L(20)INSTITUTION,L(1)S/C2,C3,C10,C4,OB C2 WH C1 EXISTS: ?):
908* LISTALLN (STRING ?LIST/TITLE D(5)ALL N-STATUS PARTICIPANTS,L(20)LAST NAME,L
(16)FIRST NAME,L(20)INSTITUTION/C2,C3,C10,OB C2 WH C4 EQ N: ?):
909* LISTALLA (STRING ?LIST/TITLE D(5)ALL A-STATUS PARTICIPANTS,L(20)LAST NAME,L
(16)FIRST NAME,L(20)INSTITUTION/C2,C3,C10,OB C2 WH C4 EQ A: ?):
910* LISTALLR (STRING ?LIST/TITLE D(5)ALL R-STATUS PARTICIPANTS,L(20)LAST NAME,L
(16)FIRST NAME,L(20)INSTITUTION/C2,C3,C10,OB C2 WH C4 EQ R: ?):
911* LISTALLK (STRING ?LIST/TITLE D(5)ALL K-STATUS PARTICIPANTS,L(20)LAST NAME,L
(16)FIRST NAME,L(20)INSTITUTION/C2,C3,C10,OB C2 WH C4 EQ K: ?):
912* LISTALLV (STRING ?LIST/TITLE D(5)ALL V-STATUS PARTICIPANTS,L(20)LAST NAME,L
(16)FIRST NAME,L(20)INSTITUTION/C2,C3,C10,OB C2 WH C4 EQ V: ?):
913* LISTALLQ (STRING ?LIST/TITLE D(5)ALL Q-STATUS PARTICIPANTS,L(20)LAST NAME,L
(16)FIRST NAME,L(20)INSTITUTION/C2,C3,C10,OB C2 WH C4 EQ Q: ?):
914* LISTG (STRING ?LIST/TITLE D(5)PARTICIPANTS & STATUS-SCHARFF-GOLDHABER,L(20)
LAST NAME,L(16)FIRST NAME,L(20)INSTITUTION,L(1)S/C2,C3,C10,C4,OB C2 WH C23 EQ G:
 ?):
915* LISTC (STRING ?LIST/TITLE D(5)PARTICIPANTS & STATUS-CLINE,L(20)LAST NAME,L(
16)FIRST NAME,L(20)INSTITUTION,L(1)S/C2,C3,C10,C4,OB C2 WH C23 EQ C: ?):
916* LISTS (STRING ?LIST/TITLE D(5)PARTICIPANTS & STATUS-SCHRAMM,L(20)LAST NAME,
L(16)FIRST NAME,L(20)INSTITUTION,L(1)S/C2,C3,C10,C4,OB C2 WH C23 EQ S: ?):
917* LISTINST (STRING ?LIST/TITLE D(5)PARTICIPANTS FROM AN INSTITUTION,L(20)LAST
 NAME,L(16)FIRST NAME,L(20)INSTITUTION,L(1)S/C2,C3,C10,C4,OB C2 WH C9 EQ*1*: ?):
918* LISTCTRY (STRING ?LIST/TITLE D(5)PARTICIPANTS FROM A COUNTRY,L(20)LAST NAME
,L(16)FIRST NAME,L(20)INSTITUTION,L(1)S/C2,C3,C10,C4,OB C2 WH C5 EQ*1* AND C7 EQ
*2*: ?):
919* LISTGEOG (STRING ?LIST/TITLE D(5)PARTICIPANTS FROM A GEOG GROUP,L(20)LAST N
AME,L(16)FIRST NAME,L(20)INSTITUTION,L(1)S/C2,C3,C10,C4,OB C2 WH C5 EQ*1*: ?):
920* PRTCNTA (STRING ?PR COUNT C0 WH C4 EQ A: ?):
921* PRTCNTN (STRING ?PR COUNT C0 WH C4 EQ N: ?):
922* PRTCNTR (STRING ?PR COUNT C0 WH C4 EQ R: ?):
923* PRTCNTK (STRING ?PR COUNT C0 WH C4 EQ K: ?):
924* PRTCNTV (STRING ?PR COUNT C0 WH C4 EQ V: ?):
925* ADDGEOG (STRING ?ADD C6 EQ*2** WH C1 EQ*1*: ?):
926* DLTGEOG (STRING ?REMOVE C6 WH C1 EQ*1*: ?):
927* ADDCTRY (STRING ?ADD C8 EQ*2** WH C1 EQ*1*: ?):
928* DLTCTRY (STRING ?REMOVE C10 WH C1 EQ*1*: ?):
929* ADDORG (STRING ?ADD C10 EQ*2** WH C1 EQ*1*: ?):
930* DLTORG (STRING ?REMOVE C10 WH C1 EQ*1*: ?):
931* CHGCODE (STRING ?CHANGE C5 EQ*5** WH C1 EQ*1*: ?):
932* CHGGEOG (STRING ?CHANGE C6 EQ*2** WH C1 EQ*1*: ?):
933* CHGCCODE (STRING ?CHANGE C7 EQ*2** WH C1 EQ*1*: ?):
934* CHGCTRY (STRING ?CHANGE C8 EQ*2** WH C1 EQ*1*: ?):
935* CHGOCODE (STRING ?CHANGE C9 EQ*2** WH C1 EQ*1*: ?):
936* CHGORG (STRING ?CHANGE C10 EQ*2** WH C1 EQ*1*: ?):
937* CHGLNAME (STRING ?CHANGE C2 EQ*2** WH C1 EQ*1*: ?):
938* CHGFNAME (STRING ?CHANGE C3 EQ*2** WH C1 EQ*1*: ?):
939* CHGSTAT (STRING ?CHANGE C4 EQ*2** WH C1 EQ*1*: ?):
940* PRTENTRY (STRING ?PR C0 WH C1 EQ*1*: ?):
941* UPDATE (STRING ?INSERT TREE C70*0 EQ 71**2** 72**3** END* WH C1 EQ*1*: ?):
942* PRTCNTQ (STRING ?PR COUNT C0 WH C4 EQ Q: ?):
943* ADDPINT (STRING ?INSERT TREE C40*0 EQ 41**2**42**3** 43*X* END* WH C1 EQ*1*
: ?):
944* ADDINT (STRING ?INSERT TREE C40*0 EQ 41**2** 42**3** END* WH C1 EQ*1*: ?):
945* LISTH (STRING ?LIST/TITLE D(20)PARTICIPANTS & STATUS-HENLEY,L(20)LAST NAME,
L(16)FIRST NAME,L(20)INSTITUTION,L(1)S/C2,C3,C10,C4,OB C2 WH C23 EQ H: ?):
946* ADDHOUSE (STRING ?INSERT TREE C100*0 EQ 101**2** 102**3** END* WH C1 EQ*1*:
 ?):
947* ADDMEAL (STRING?INSERT TREE C150*0 EQ 151**2** 152**3** 153*X* 154**4** 155
*3.00* END* WH C1 EQ*1*: ?):
```

Appendix D

```
948*ADDBANQ(STRING?INSERT TREE C150*0 EQ 151*3* 152*BANQUET* 153*X* 154*10/21/77
* END* WH C1 EQ*1*: ?):
949*ADDBQPAY(STRING?INSERT TREE C150*0 EQ 151*3* 152BANQUET* 153*X* 154*10/21/77
* 155*10.00* END* WH C1 EQ*1*: ?):
950*ADDLNCH1(STRING?INSERT TREE C150*0 EQ 151*1* 152*LUNCH 1* 153*X* 154*10/21/7
7* 155*3.00* END* WH C1 EQ*1*: ?):
951*ADDLNCH2(STRING?INSERT TREE C150*0 EQ 151*2* 152*LUNCH 2* 153*X* 154*10/21/7
7* 155*3.00* END* WH C1 EQ*1*: ?):
952*ADDLNCH4(STRING?INSERT TREE C150*0 EQ 151*4* 152*LUNCH 4* 153*X* 154*10/21/7
7* 155*2.00* END* WH C1 EQ*1*: ?):
953*ADDLNCH5(STRING?INSERT TREE C150*0 EQ 151*5* 152*LUNCH 5* 153*X* 154*10/21/7
7* 155*2.00* END* WH C1 EQ*1*: ?):
954*CHKIN(STRING?ADD C12 EQ X* WH C1 EQ*1*: ?):
955*PAYDATE(STRING?ADD C22 EQ 10/21/77* WH C1 EQ*1*: ?):
STOP AFTER SCAN IF ERRORS OCCUR:
MAP:
```

Appendix E

GEOGRAPHICAL CODES

Codes indicating the general geographical area the institution is located within

Code No.	Geographical Area
1	United States
2	Eastern Europe
3	Western Europe
4	Other

Geographical and Country Codes are listed below:

Country	Geo. Code	Country Code	Country	Geo. Code	Country Code
Afghanistan	4	01	Netherland	3	36
Albania	2	02	New Zealand	4	37
Argentina	4	03	Nigeria	4	38
Australia	4	04	Norway	3	39
Austria	3	05	Pakistan	4	40
Bangladesh	4	06	Peru	4	41
Belgium	3	07	Poland	2	42
Bolivia	4	08	Romania	2	43
Brazil	4	09	Singapore	4	44
Bulgaria	2	10	South Africa	4	45
Burundi	4	11	South Korea	4	46
Canada	4	12	Spain	3	47
CERN	3	51	Sri Lanka	4	48
Chile	4	13	Sudan	4	49
China, Peoples Rep.	4	14	Sweden	3	50
Czechoslovakia	2	15	Switzerland	3	51
Denmark	3	16	Taiwan	4	52
Finland	4	17	Turkey	4	53
France	3	18	United Soviet SocRep	2	54
German Dem.Rep. East	2	19	England	3	55
Germany Fed.Rep.West	3	20	Uruguay	4	57
Greece	4	21	Venezuela	4	58
Hong Kong	4	22	Yugoslavia	4	59
Hungary	2	23	Korea (North)	4	61
ICTP - Trieste	3	30	Kuwait	4	62
India	4	24	Armenia	2	63
Iran	4	26	Indonesia	4	64
Iraq	4	27	Java	4	65
Irish Free State	3	28	Wales	3	66
Israel	4	29	Scotland	3	67
Italy	3	30	Saudia Arabia	4	68
Japan	4	31	Portugal	3	69
JINR, Dubna	2	54	Syria	4	71
Lebanon	4	32			
Mexico	4	33			
Mongolia	2	34			
Morocco	4	35			

Appendix F

State and Territory Codes

State	Geo. Code	Country Code	State	Geo. Code	Country Code
Alabama	1	01	Montana	1	27
Alaska	1	02	Nebraska	1	28
Arizona	1	03	Nevada	1	29
Arkansas	1	04	New Hampshire	1	30
California	1	05	New Jersey	1	31
Colorado	1	06	New Mexico	1	32
Connecticut	1	07	New York	1	33
Delaware	1	08	North Carolina	1	34
District of Columbia	1	09	North Dakota	1	35
Florida	1	10	Ohio	1	36
Georgia	1	11	Oklahoma	1	37
Hawaii	1	12	Oregon	1	38
Idaho	1	13	Pennsylvania	1	39
Illinois	1	14	Rhode Island	1	40
Indiana	1	15	South Carolina	1	41
Iowa	1	16	South Dakota	1	42
Kansas	1	17	Tennessee	1	43
Kentucky	1	18	Texas	1	44
Louisiana	1	19	Utah	1	45
Maine	1	20	Vermont	1	46
Maryland	1	21	Virginia	1	47
Massachusetts	1	22	Washington	1	48
Michigan	1	23	West Virginia	1	49
Minnesota	1	24	Wisconsin	1	50
Mississippi	1	25	Wyoming	1	51
Missouri	1	26	Canal Zone	1	52
			Puerto Rico	1	53
			Guam	1	54
			Virgin Island	1	55

Appendix G

Organization Codes (Partial)

3	18	FTL	ELEM. PARTICLES LAB
3	18	FTP	IPN, ORSAY
3	18	FUE	U.E.R. DE LUMINY
3	18	FUM	LANGUEDOC, U DES SCI
3	18	FUT	LAB PHYS DES PARTICL
3	20	GAB	ASTROPHYS. INST
3	20	GAK	UNIV. KIEL, KIEL
3	20	GAM	MAX-PLANK, IFPUAP
3	20	GBB	INST F EXP. PHYSIK
3	20	GBB	FAK. F. PHYSIK
3	20	GBQ	RURH-UNIV BOCHUM
3	20	GDD	DORTMUND, UNIV. OF
3	20	GDS	DESY, HAMBURG
2	19	GEB	HUMBOLDT UNIV
2	19	GED	T.U. DRESDEN DEPT PH
2	19	GEL	LEIPZIG-KARL-MARX-U.
1	50	GEM	GENERAL ELECTRIC (MILWAUKEE)
2	19	GER	CENT INST F KERNFORS
2	19	GEZ	INST F HOCHENERGIEPH
3	20	GFB	FREIE UNIV. BERLIN
3	20	GFF	INST F KERNPHYSIK
3	20	GFP	UNIV FREIBURG, FFP
3	20	GGD	GSI, DARMSTADT
3	20	GGG	UNIV GOTTINGEN, IFTP
3	20	GGM	J. GUTENBERG U., IFP
3	20	GGS	FACHBEREICH F PHYSIK
3	20	GHA	I. PHYS. INST.
3	20	GHA	II. PHYS. INST.
3	20	GHH	HAMBURG U., IFEP
3	20	GHM	MARBURG, U.
3	20	GHT	HEIDELBERG UNIV IFTP
3	20	GIH	HEIDELBERG UNIV IFHP
3	20	GIK	KARLSRUHE U., ITP
3	20	GKD	TCH HOCHSCH DARMSTDT
3	20	GKK	FACHBEREICH PHYS, KU
3	20	GKM	MUNSTER U.
3	20	GLH	LANDESSTERNWART
3	20	GMG	UNIV. MUNCHEN, SP
3	20	GMM	MAX-PLANCK, MAINZ
3	20	GMP	MAX-PLANCK INST F KP
3	20	GMU	UNIV. MUNCHEN, TP
3	20	GPH	PHYS INST-HEIDEL. U.
3	20	GPK	UNIV. KOLN
4	21	GRA	UNIV. ATHENS
4	21	GRD	DEMO, ATHENS
3	20	GRK	HE-THEOR GROUP, KU.
4	21	GRL	LAB. OF EXP. PHYS-UA
4	21	GRN	NAT TECH UNIV ATHENS
4	21	GRT	UNIV OF THESSALONIKI
3	20	GSA	III. PHYS. INST. B
3	20	GSO	EUROPEAN SO. OBSER
3	20	GSS	U STUTTGART, II.IFTP
3	20	GTA	TCH HOCHSCH AACHEN
3	20	GTB	TECH. UNIV. BERLIN
3	20	GTF	INST F THEOR PHYSIK
3	20	GTH	TECH UNIV HANNOVER
3	20	GTT	UNIV TUBINGEN, IFTP
3	20	GUB	INST F STRAHLEN-U.BO
3	20	GUB	BONN, U.
3	20	GUK	UNIV KARLSRUHE IFTKP

Appendix H

File Allocation on 7330 Disks
(660 Conference Participants.*)

Name	Space
File 1	2492,(15,5)
File 2	2492,(125,5
File 3	2492,(15,5)
File 4	2492,(25,5)
File 5	3136,(35,5)
File 6	2492,(115,5)
File 7	TRK,(5,1)

*Overabundant to avoid running out of space during conference

Acknowledgments

It would be hypocritical of me to present this paper as the result of my labors alone. I am deeply indebted to many people for contributions to the design and implementation of this system and the preparation of this paper.

To Helen Peterson for designing reasonable geographical, country, state, and organization codes and providing great insight to the internal workings of an international conference.

To Judy Ward for not forgetting important scraps of information for the data base and mailing all the reports to the committees.

To Frances Petersen and Judson Parker for providing moral and technical support at moments of crisis during the conference.

To Edith Brown for supplying the last minute programming.

To Doris Bart for patient and accurate typing of my scattered thoughts from illegible handwriting.

To Angela Gonzales for preparing the figures and cover for this paper.

To Nancy Stiening for editing this paper and contributing many valuable suggestions.

Anne Burwell
March 1978